UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,716	10/15/2001	Mark I. Greene	PENN-0786	4425

34136 7590 09/21/2006

COZEN O'CONNOR, P.C.
1900 MARKET STREET
PHILADELPHIA, PA 19103-3508

EXAMINER	
TUNG, JOYCE	

ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/977,716	GREENE ET AL.	
	Examiner	Art Unit	
	Joyce Tung	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 15-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 15-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/5/&6/7/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The applicant's response filed 7/19/06 to the Office action has been entered. Claims 1, 15-16 and 18-33 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/19/2006 has been entered.

Applicant's arguments 7/19/06 with respect to claims 1 and 15-33 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Claim 31 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 32. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim

to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 15-16, and 18-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 7,045,286. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are drawn to a method for detecting or quantifying molecules expressing a selected epitope in which the instant claims have the similar method steps with the method steps of claims 1-16 of U.S. Patent No. 7,045,286 except that in the instant invention, the epitope detector comprises the oligonucleotide attached to a monoclonal antibody for the selected epitope and specified by comprising a RNA promoter. Thus, the instant claims and the patented claims are related as genus-species. The double patenting rejection is applicable.

6. Claims 1, 15-16, and 18-33 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 4, and 12-18 of copending Application No. 10/856,057. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are drawn to a method for detecting or quantifying molecules expressing a selected epitope in which the instant claims have the similar method steps with claims 1-2, 4, and 12-18 of copending Application No. 10/856,057 except that in the instant invention, the oligonucleotide is attached to a monoclonal antibody for the selected epitope, a single chain Fv for the epitope, a constrained epitope specific CDR, a CDR mimetic or an engineered CDR structure, while in claims 1-2, 4, and 12-18 of copending Application No. 10/856,057, the epitope detector is selected from the group consisting of a single chain Fv for the selected epitope and a constrained epitope selected specific CDR and has the oligonucleotide attached to it. Thus, the instant invention and the copending invention are related as genus-species. The double patenting rejection is applicable.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 1, 15-16, and 18-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 10/333542. Although the conflicting claims are not identical, they are not patentably distinct from each other because both inventions are drawn to a method of detecting molecules expressing a selected epitope in a sample with the same steps as the method steps of claims 1-4 of copending Application No. 10/333542, which are immobilizing a molecule expressing a selected epitope in a sample to a selected surface and contacting the surface with an

epitope detector binds to immobilized molecules on the surface. The differences between both inventions are that the instant claims 1 and 15-22 further require the epitope detector which comprises an oligonucleotide attached to a monoclonal antibody for the selected epitope, a single chain Fv for the epitope, a constrained epitope specific CDR, a CDR mimetic or engineered CDR structure, amplifying the oligonucleotide of the epitope detector by RNA amplification and then detecting the molecules expressing a selected epitope in sample via detecting the amplified oligonucleotide. However, these limitations in the instant claims are addressed in the specification of copending Application SN: 10/333,542 (See pg. 5, and 9). Thus, the instant claims and the claims of copending application are related as genus-species. The double patenting rejection is applicable.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 15-16, and 18-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eberwine et al. (5,922,553, issued 7/13/1999) in view of Fields et al. (WO 94/26932, issued November 24, 1994) and Waggoner (5,627,027, issued May 6, 1997).

Eberwine et al. disclose a method, which is for detecting a selected protein by immuno aRNA (See column, 2, lines, 37-50). The presence and quantity of labeled RNA transcript is indicative of the amount of selected protein present (See column 4, lines 33-36 and columns 7-8, claims 1-2). In the method a first antibody targeted to the selected protein is immobilized to a solid support. A RNA-promoter driven cDNA sequence is covalently coupled to a second antibody, which binds the selected protein (See column 2, lines 37-51). The cDNA is double stranded (See column 5, lines 34-35) for use as a template for T7 RNA polymerase (see column 4, lines 41-42). The technique of a RNA synthesis is explicitly disclosed (See column 3, lines 9-24). First strand synthesis proceeds with the addition of AMV-reverse transcriptase (See column 4, lines 50-51). The presence and quantity of labeled RNA transcript is indicative of the amount of selected protein present (See column 4, lines 33-36).

Eberwine et al. do not disclose using fluorescent dye to stain the amplified RNA and that the fluorescent dye is cyanine dye.

Waggoner disclose that cyanine dye can be used to attach to fragments of DNA or RNA to identify the presence and quantity of specific nucleotide sequence in samples of DNA or RNA (See column 8, lines 51-56).

Eberwine et al. also do not disclose that biotin is located at the 5' terminus of the oligonucleotide and biotin-streptavidin linker is used in attaching between the monoclonal antibody and the oligonucleotide.

Fields et al. disclose nucleic acid tagged immunoassay. The method involves an oligonucleotide linked to a ligand bound to an antigen in a specimen from a subject and detecting the presence of the oligonucleotide indicating the presence of the antigen in the subject (See pg. 2, lines 14-25). Biotin-streptavidin linker is used in linking the oligonucleotide to the ligand (See pg. 5, lines 5-12). The oligonucleotide is amplified by polymerase chain reaction prior to detection (See pg. 5, lines 31-34). The oligonuleotide is biotinylated at 5' terminus (See pg. 15, lines 24-29). Other method of detecting the presence of the oligonucleotide include the detection of RNA transcripts generated from the oligonucleotide using RNA polymerase (See pg. 6, lines 27-29).

One of ordinary skill in the art at the time of the instant invention would have been motivated to modify the method of Eberwine et al. by applying fluorescent dye, cyanine dye to stain the amplified RNA for detecting molecules expressing a selected epitope in a sample as taught by Waggoner because as indicated by Waggoner, cyanine dye is highly light absorbing dye molecules to nucleic acid and can be used for detection and quantification in very low amounts (See column 4, lines 35-45) It would have been prima facie obvious to apply cyanine dye for detecting or quantifying molecule expressing a selected epitope in a sample.

One of ordinary skill in the art at the time of the instant invention would have also been motivated to apply the biotin-streptavidin as linker for attaching the oligonucleotide to the monoclonal antibody as taught by Fields et al. because the method of Fields et al. can be used in detecting very small quantities of antigen and antibody (See pg. 7, lines 22-25). It would have been prima facie obvious to apply the linker biotin-streptavidin for attaching the oligonucleotide to the monoclonal antibody for detecting or quantifying molecules expressing a selected epitope in a sample.

Summary

10. No claims are allowable.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joyce Tung whose telephone number is (571) 272-0790. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joyce Tung JT
September 13, 2006

KENNETH R. HORLICK, PH.D
PRIMARY EXAMINER
9/14/06